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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Haijun Wu

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EXAMINER

CLAWSON, STEPHEN J

ART UNIT

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4172

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/585,798	Applicant(s) WU, HAIJUN	
	Examiner STEPHEN CLAWSON	Art Unit 4172	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 July 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>11/26/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claim 1-10 and 13 are rejected under 35 U.S.C. 102(b) as being anticipated by Ramaswamy (**WIPO Publication WO 01/95569 A2**).

Regarding claim 1, Ramaswamy discloses a bandwidth expanded Digital Subscriber Line Access Multiplexer (DSLAM) for multicasting video service comprises a main control board, subscriber interface boards and a data bus which is connected between the main control board bus which is connected between the main control board and each of the subscriber interface boards for transmitting a video service stream. **(See Ramaswamy; Ramaswamy discloses a DSLAM for distribution of audio, video over a DSL network. (pg. 2 lines 5-10) The method provides for multicast delivery of information between a single source and multiple subscriber interface destination ports (boards). (pg. 2 lines 15-20) Fig. 2 shows a representation of the main controller board bus connecting each of the subscriber interface boards.)**

Regarding claim 2, Ramaswamy teaches the bandwidth expanded DSLAM according to claim 1, wherein the DSLAM further comprises a multicasting distributor module; the main control board comprises a data processing module and a control module connected with the data processing module; the data processing module outputs the video service stream to an input of the multicasting distributor module, and an output of the multicasting distributor module is connected to the video bus. **(See Ramaswamy; Ramaswamy discloses a DSLAM for distribution of audio, video over a DSL network. (pg. 2 lines 5-10) The method provides for multicast delivery of information between a single source and multiple subscriber interface destination ports (boards). (pg. 2 lines 15-20) Fig. 2 shows a representation of the main controller board bus connecting each of the subscriber interface boards.)**

Regarding claim 3, Ramaswamy discloses the bandwidth expanded DSLAM according to claim 1, wherein the video bus is point-to-point star bus where the output of the multicasting distributor module is respectively connected to a data processing module in each subscriber interface board; the multicasting distributor module is used for duplicating the inputted video service stream and outputting to each subscriber interface board, respectively. **(See Ramaswamy; Fig. 2 shows a point-to-point star bus configuration where the output of the multicasting distributor module is connected to the output subscriber interface boards. The ATM multicasting at**

the ATM layer at the head-end of the network permits efficient distribution of video streams. (pg. 6; lines 20-28))

Regarding claim 4, Ramaswamy teaches the bandwidth expanded DSLAM according to claim 1, wherein the video bus is shared bus where the output of the multicasting distributor module is connected to the data processing module in each subscriber interface board in parallel; the multicasting distributor module is used for directly driving the inputted video service stream to each subscriber interface board. **(See Ramaswamy; Fig. 2 shows a point-to-point star bus configuration (this is a parallel connection) where the output of the multicasting distributor module is connected to the output subscriber interface boards. Ramaswamy discloses a DSLAM for distribution of audio, video over a DSL network. (pg. 2 lines 5-10) The method provides for multicast delivery of information between a single source and multiple subscriber interface destination ports (boards). (pg. 2 lines 15-20) Fig. 2 shows a representation of the main controller board bus connecting each of the subscriber interface boards.)**

Regarding claim 5, Ramaswamy discloses the bandwidth expanded DSLAM according to claim 1, wherein the video bus comprises one set of bus or multiple sets of buses carrying different video channels of the video service stream. **(See Ramaswamy; Ramaswamy discloses a DSLAM for distribution of audio, video over a DSL network. (pg. 2 lines 5-10) The method provides for multicast delivery**

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of information from a single source through a bus to multiple subscriber interface destination ports (boards). (pg. 2 lines 15-20) Fig. 2 shows a representation of the main controller board bus connecting each of the subscriber interface boards. It is well known in the art that these bus lines would carry multiple-different data streams simultaneously.)

Regarding claim 6, Ramaswamy teaches the bandwidth expanded DSLAM according to claim 1, wherein the video bus is Gigabit Ethernet (GE) bus or Cell bus. **(See Ramaswamy; Ramaswamy teaches the use of ATM which is an ultra high-speed cell data transmission protocol.)**

Regarding claim 7, Ramaswamy discloses the bandwidth expanded DSLAM according to claim 1, wherein the video bus is a unidirectional bus transmitting the video service stream from the main control board to the subscriber interface board. **(See Ramaswamy; Ramaswamy discloses a DSLAM for distribution of audio, video over a DSL network. (pg. 2 lines 5-10) The method provides for multicast delivery of information from a single source through a bus to multiple subscriber interface destination ports (boards). (pg. 2 lines 15-20) Fig. 2 shows a representation of the main controller board bus connecting each of the subscriber interface boards. It is well known in the art that these bus lines would carry multiple-different data streams simultaneously. Multicasting is, by its very nature, a unidirectional stream of data and information.)**

Regarding claim 8, Ramaswamy teaches a transmission method for bandwidth expanded DSLAM comprising,

Connecting a main control board and each of subscriber interface boards in the DSLAM with a video bus, and

Detecting whether a service from a network interface is a video service stream by the main control board; if it is, transmitting to each subscriber interface board through the video bus in the DSLAM, otherwise transmitting it through a data bus. **(See Ramaswamy; Ramaswamy discloses receiving information at the source port and determining which destination ports are to receive the information. (pg. 2; lines 15-21) Thus, information is multiplexed. These multiplexed streams include data, voice and video streams and are sent across the DSLAM's bus.)**

Regarding claim 9, Ramaswamy discloses the transmission method according to claim 8, wherein the step of transmitting to each subscriber interface board through the video bus in the DSLAM comprises,

Transmitting the video service stream to an added multicasting distributor module by a data processing module in the main control board, and

The multicasting distributor module transparently forwarding to the video bus which is shared, and broadcasting to a data processing module of each subscriber interface board through the video bus. **(See Ramaswamy; Ramaswamy discloses a DSLAM for distribution of audio, video over a DSL network. (pg. 2 lines 5-10) The**

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method provides for multicast delivery of information between a single source and multiple subscriber interface destination ports (boards). (pg. 2 lines 15-20)

Fig. 2 shows a representation of the main controller board bus connecting each of the subscriber interface boards.)

Regarding claim 10, Ramaswamy teaches the transmission method according to claim 8, wherein the step of transmitting to each subscriber interface board through the video bus in the DSLAM comprises,

Transmitting the video service stream to the multicasting distributor module by the data processing module in the main control board;

Duplicating the video service stream same copies with the number of connected subscriber interface boards in broadcast mode, or duplicating it according to multicasting allocation in multicast mode by the multicasting distributor module, and

Outputting the copied video service stream to the data processing module in each subscriber interface board through the video bus which is a point-to-point star connection.

(See Ramaswamy; Fig. 2 shows a point-to-point star bus configuration (this is a parallel connection) where the output of the multicasting distributor module is connected to the output subscriber interface boards.

Ramaswamy discloses a DSLAM for distribution of audio, video over a DSL network. (pg. 2 lines 5-10) The method provides for multicast delivery of information between a single source and multiple subscriber interface destination

ports (boards). (pg. 2 lines 15-20) Fig. 2 shows a representation of the main controller board bus connecting each of the subscriber interface boards.)

Regarding claim 13, Ramaswamy discloses the transmission method according to claim 8, further comprising, transmitting all data from the multicast subscriber interface to the main control board through the data bus by the subscriber interface board. **(See Ramaswamy pg. 1 lines 23-26; Ramaswamy describes asynchronous DSL that transmit 8 Mbps downstream and 16 kbps to 960 kbps upstream. The subscriber is sending data via the bus through the DSLAM onto the backbone network.)**

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ramaswamy (**WIPO Publication WO 01/95569 A2**) as applied to claims 1-10 and 13 above, and further in view of Kim (**Kim, Ji Ho, et. al. "Design of Shared Medium ATM Switch Targeted to Support Broadcasting DSLAM" © 2002**).

Regarding claim 11, Ramaswamy discloses the transmission method according to claim 8. (see above) However, Ramaswamy does not disclose the duplicating of the received video stream from the video bus by the data processing module in the

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subscriber interface board, and outputting to a multicasting subscriber interface; Kim does. Kim teaches a DSLAM core switch architecture that creates a ring-type network bus allowing for the subscriber cards to duplicate video or other data. **(Kim pg. 308 Section II; fig. 2)**. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to combine a DSLAM containing a video multicasting star network topology disclosed in Ramaswamy with a ring-type network disclosed in Kim. One would combine the two to achieve greater network efficiency and, thereby, increasing network capacity.

Regarding claim 12, the combination of Ramaswamy and Kim teaches the transmission method according to claim 8, further comprising, detecting whether the received service stream from the video bus is a video service stream by the data processing module in the subscriber interface board; if it is, duplicating the received service stream and outputting to the multicasting subscriber interface, otherwise discarding it. This claim is essentially claiming a ring network as disclosed in Kim. **(See Kim Section II; fig. 2)**

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEPHEN CLAWSON whose telephone number is (571)270-7498. The examiner can normally be reached on M-F 7:30-5:00 pm est.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lewis West can be reached on 571-272-7859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/STEPHEN CLAWSON/
Examiner, Art Unit 4172

/Lewis G. West/
Supervisory Patent Examiner, Art Unit 4172